

Adoption of Plants in Phytoremediation

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Introduction

Heavy metal contamination often results from human activities which inadvertently result in environmental problems. Phytoremediation is therefore an effective cleanup mechanism for the removal of the pollutants from the environment with green plants. This method which is a cost effective green technology contrivance and which includes, phytoextraction, phytodegradation, rhizofiltration, phytostabilization and phytovotalization is stirred towards the removal of the heavy metals through extraction, avoidance of migration or dispersion of contaminants through wind and water erosion as well as breaking down of contaminants and its absorption by plants which are often released through evapo-transpiration processes after modification in the plants. All these are striving efforts in the adoption of environmentally safe control strategies for heavy metal control.

Considering the effects of heavy metals, the extent of soil contamination is of utmost importance which culminates in various setbacks in plant morphology, quality and yield. Although, Zhen-Guo et al. in 2002 [1] reported that heavy metal contamination often results from brick kilns and coal combustion while Dembitsky [2], 2003 further explained that heavy metal contaminations could result

from geological and anthropogenic activities which include, industrial effluents, fuel production, mining, smelting processes, military operations, utilization of agricultural chemicals, small scale industries (including battery production, metal products, metal smelting and cable coating industries). Consequently, the prominent sources contributing to increased load of soil contamination is the poor waste disposal method which is often experienced in the developing countries. This concept, from a personal research on the adopted use of *Chrysopogon zizanioides* in phytoremediation (unpublished) corroborates the opinion of Zen-Guo et al. [1] that municipal wastes are either dumped on road sides or used as landfills, while sewage is used for irrigation. Consequently, the wastes although useful as a source of nutrients are also sources of carcinogens and toxic metals. Other sources which were also identified were unsafe or excess application of pesticides, fungicides and fertilizers.

In view of all these challenges, researches should tend towards instituting policies which would ensure a safe human environment most especially in the use of chemicals in terms of, when it should be applied, where it should be applied and what should be applied. In the same vein, researches on the use of plants should be given wider attention and encouragement. Several plants that could be effective in phytoremediation had also been documented by Maistrello et al., [3], Singh et al., [4] and Zhu et al. [5]. Further research works could be done on these plants to broaden the scope of phytoremediation.

While heavy metals are considered to be the major sources of soil pollution, some are equally reported to be of bio-importance to man such that they are recommended in daily and medicinal consumptions. At this juncture, I wish to submit that every aspect of research on pollution and bioremediation should be encouraged and accepted after adequate corrections. This should be an avenue to motivate researchers to inform the public about their findings and consequently create a basis for other researches. It is desirous that this journal will be of utmost importance in providing adequate information in pollution control and phyto-remediation. Consequently, the adoption and usage of plants which had earlier been ruthlessly eliminated shall be considered for scientific researches which will in no small measure reposition the perspective of several researchers for a better performance and secured future.

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